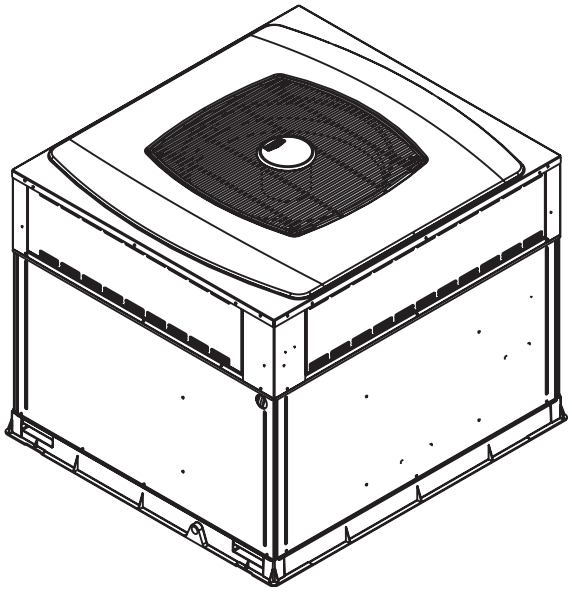
704C
EVOLUTION™ 13 SEER SINGLE-PACKAGED AIR CONDITIONER SYSTEM WITH PURON® (R-410A) REFRIGERANT
2 TO 5 NOMINAL TONS (024-060)

bryant®

Product Data



A06047

Unit 704C

Single-Packaged Products with Energy-Saving Features and Puron® refrigerant.

- 13 SEER
- Low Sound Levels
- Variable-Speed Blower (Standard)
- Factory-Installed TXV

FEATURES/BENEFITS

One-piece cooling unit with optional electric heater, low installation cost, dependable performance and easy maintenance.

Efficient operation

High-efficiency design with SEERs (Seasonal Energy Efficiency Ratio) of 13.0.

Puron® Environmentally-Sound Refrigerant is Bryant's unique refrigerant designed to help protect the environment. Puron refrigerant is an HFC refrigerant which does not contain chlorine that can harm the ozone layer. The most important advantage of Puron refrigerant is that it has not been banned in future air conditioning systems as the traditional refrigerant R-22 has been. Puron refrigerant is in service in over 100,000 systems proving highly reliable, environmentally sound performance.

PerfectHumidity™ Technology featuring Evolution™ control and Variable-Speed Blower motor that provides greater comfort, humidity control, and energy efficiency.

Variable-Speed Blower motors provide better comfort and energy efficiency. You can expect up to 30 times better dehumidification; economical constant fan which provides improved indoor air quality and more even temperatures from room to room; and reduced indoor noise due to lower air velocity. In addition, you'll realize improved installation flexibility with 3 different airflow choices for best overall comfort.

Easy installation

Factory-assembled package is a compact, fully self-contained, electric cooling unit that is pre-wired, pre-piped, and pre-charged for minimum installation expense. 704C units are available in a variety of standard capacity ranges with voltage options to meet residential and light commercial requirements. Units install easily on a rooftop or at ground level.

Durable, dependable components

Compressors are designed for high efficiency. Each compressor is hermetically sealed against contamination to help promote longer life and dependable operation. Vibration isolation provides quiet operation. Compressors have internal high-pressure and overcurrent protection.

Convertible duct configuration

Unit is designed for easy use in either downflow or horizontal applications. Each unit is easily converted from horizontal to downflow and includes horizontal duct covers.

Direct-drive, variable-speed blower motor is standard on all 704C models.

Direct-drive, PSC condenser fan motors are designed to help reduce energy consumption and provide for cooling operation down to 55°F outdoor temperature. Motormaster® II low-ambient kit is available as a field-installed accessory.

Evolution™ User Interface designed to work as a system with Bryant's single-packaged product.

Refrigerant system is designed to provide dependability. Liquid refrigerant filter driers are used to promote clean, unrestricted operation. Each unit leaves the factory with a full Puron refrigerant charge. Refrigerant service connections make checking operating pressures easier.

Indoor and outdoor coils are computer designed for optimum heat transfer and cooling efficiency. The indoor coil is fabricated from copper tube and aluminum fins and is located inside the unit for protection against damage. The outdoor coil is internally mounted on the top tier of the unit. Copper fin coils and pre-coated fin coils are available from the factory by special order. These coils are recommended in applications where aluminum fins are likely to be damaged due to corrosion. They are ideal for seacoast applications.

Thermostatic Expansion Valve—A hard-shutoff, balance-port TXV maintains a constant superheat at the evaporator exit (cooling cycle) resulting in higher overall system efficiency.

High- and Low-Pressure Switches give added safety and reliability to the compressor.

Low sound ratings ensure a quiet indoor and outdoor environment with sound ratings as low as 72 dB. (See page 3.)

Easy to service cabinets provide easy single-panel accessibility to serviceable components during maintenance and installation. The basepan, with integrated drain pan, provides easy ground level installation with or without a mounting pad. Convenient

handholds are provided to manipulate the unit on the job site. A nesting feature ensures a positive basepan to roof curb seal when the unit is roof mounted. A convenient 3/4-in. wide perimeter flange makes frame mounting on a rooftop easy.

Louvered grille provides hail and vandalism protection for the coil.

Downflow operation is easily provided in the field to allow vertical ductwork connections. The basepan utilizes knockout style seals on the bottom openings to ensure a positive seal in the horizontal airflow mode.

Cabinets are constructed of heavy-duty, phosphated, zinc-coated, pre-painted steel capable of withstanding 500 hrs of salt spray. Interior surfaces of the evaporator and electric heater compartments are insulated with cleanable semi-rigid insulation board, which keeps the conditioned air from being affected by the outdoor ambient temperature and provides improved indoor air quality. (Conforms to American Society of Heating, Refrigeration and Air Conditioning Engineers No. 62P.) The sloped drain pan minimizes standing water in the drain, which is provided with an external drain.

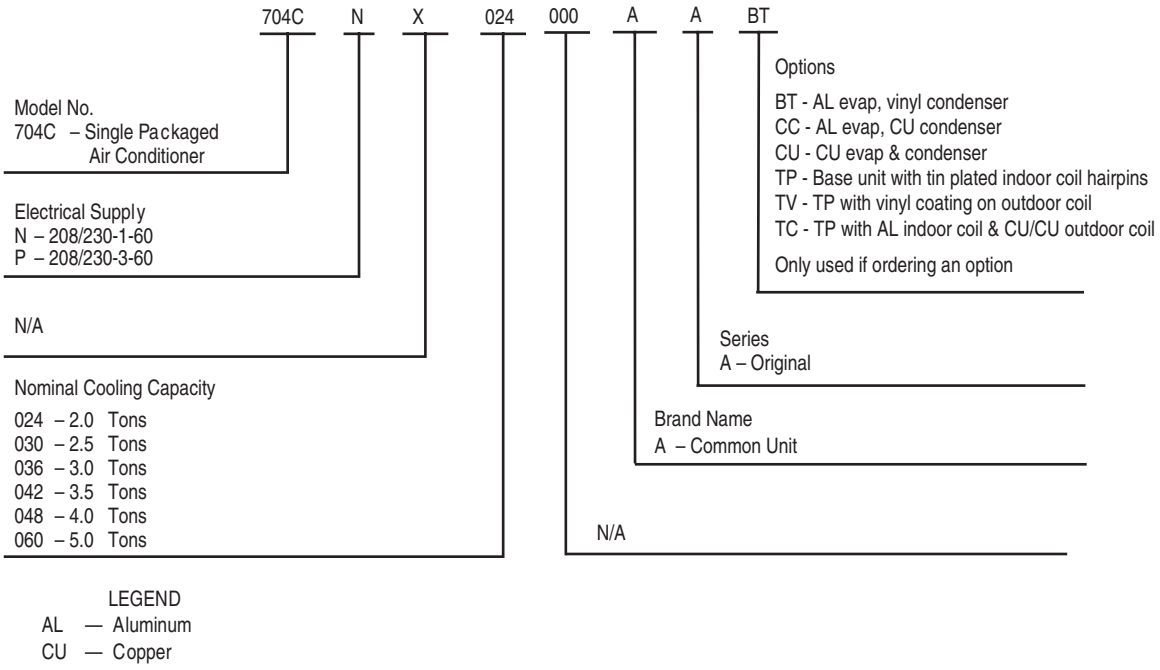
Standard metal duct covers with insulation come with the unit and cover the horizontal duct openings. These can be left in place if the units are converted to downflow.

Limited Warranty—Standard 5-year limited warranty on all parts, 10-year limited warranty on compressor.

TABLE OF CONTENTS

FEATURES/BENEFITS 1-2
MODEL NUMBER NOMENCLATURE 3
ARI CAPACITIES 3
PHYSICAL DATA 4
OPTIONS AND ACCESSORIES 5-6
BASE UNIT DIMENSIONS 7-8
ACCESSORY DIMENSIONS 9
CORNER WEIGHTS 10
SELECTION PROCEDURE 10
PERFORMANCE DATA 11-14
TYPICAL PIPING AND WIRING 15
APPLICATION DATA 16
ELECTRICAL DATA 17-18
TYPICAL WIRING SCHEMATICS 19-20
CONTROLS 21
GUIDE SPECIFICATIONS 22-23

MODEL NUMBER NOMENCLATURE


704C N X 024 000 A A BT
Model No.
704C – Single Packaged Air Conditioner
Electrical Supply
N – 208/230-1-60
P – 208/230-3-60
N/A
Nominal Cooling Capacity
024 – 2.0 Tons
030 – 2.5 Tons
036 – 3.0 Tons
042 – 3.5 Tons
048 – 4.0 Tons
060 – 5.0 Tons
N/A
Brand Name
A – Common Unit
Series
A – Original
Options
BT - AL evap, vinyl condenser
CC - AL evap, CU condenser
CU - CU evap & condenser
TP - Base unit with tin plated indoor coil hairpins
TV - TP with vinyl coating on outdoor coil
TC - TP with AL indoor coil & CU/CU outdoor coil
Only used if ordering an option

LEGEND
AL — Aluminum
CU — Copper

704C

ARI* CAPACITIES

Cooling Capacities, Efficiencies and Sound Ratings

Unit 704C	Nominal Tons	Standard CFM	Net Cooling Capacities (Btuh)	EER @A**	SEER†	Sound Ratings‡ (dBA)
024	2	800	24,000	11	13.0	72
030	2-1/2	1000	28,800	11	13.0	72
036	3	1200	36,000	11	13.0	74
042	3-1/2	1400	41,000	11	13.0	74
048	4	1600	45,000	11	13.0	78
060	5	1750	57,000	11	13.0	78

* Air Conditioning & Refrigeration Institute.
** "A" conditions–80°F indoor db/67°F indoor wb & 95°F outdoor db. † Rated in accordance with U.S. Government DOE (Department of Energy) test procedures and/or ARI Standards 210/240–94.
‡ Tested in accordance with ARI Standard 270–95 (not listed in ARI).

NOTES
1. Ratings are net values, reflecting the effects of circulating fan heat. Ratings are based on:
Cooling Standard: 80°F db, 67°Fwb indoor entering –air temperature and 95°F db outdoor entering–air temperature.
2. Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

LEGEND
dBA—Sound Levels (decibels)
db—Dry Bulb
SEER—Seasonal Energy Efficiency Ratio
wb—Wet Bulb

PHYSICAL DATA

UNIT SIZE	024	030	036	042	048	060
NOMINAL CAPACITY (ton)	2	2-1/2	3	3-1/2	4	5
OPERATING WEIGHT (lb.)	350	350	373	440	463	499
COMPRESSOR	Scroll					
REFRIGERANT (R-410A) Quantity (lb.)	7.5	8	9.5	10.8	11.5	14.0
REFRIGERANT METERING DEVICE	TXV					
ORIFICE OD (in.)	0.035 (2)	0.035 (2)	0.038 (2)	0.038 (2)	0.038 (Left OD Coil) 0.046 (Right OD Coil)	0.042 (Left OD Coil) 0.052 (Right OD Coil)
OUTDOOR COIL						
Rows…Fins/in.	2…21	2…21	2…21	2…21	2…21	2…21
Face Area (sq. ft.)	12.3	12.3	13.6	15.4	17.2	19.4
OUTDOOR FAN						
Nominal Cfm	2700	2700	2800	2800	3300	3300
Diameter	22	22	22	22	22	22
Motor HP (RPM)	1/8 (825)	1/8 (825)	1/8 (825)	1/8 (825)	1/4 (1100)	1/4 (1100)
INDOOR COIL						
Rows…Fins/in.	3…15	3…15	4…15	3…15	4…15	4…17
Face Area (sq. ft.)	3.7	3.7	3.7	4.7	4.7	5.7
INDOOR BLOWER						
Nominal Airflow (Cfm)						
Comfort	Variable based on Comfort Rollback (see User Interface instructions for more information).					
Efficiency	700	875	1050	1225	1400	1750
Max	800	1000	1200	1400	1600	2000
Size (in.)	10x10	10x10	11x10	11x10	11x10	11x10
Motor HP (RPM)	1/2	1/2	3/4	3/4	3/4	1
HIGH-PRESSURE SWITCH (psig)						
Cutout	650 ± 15					
Reset (Auto)	420 ± 25					
LOSS-OF-CHARGE SWITCH						
(Liquid Line) (psig)						
Cutout	20 ± 5					
Reset (Auto)	45 ± 10					
RETURN-AIR FILTERS (IN.)*						
Throwaway	20x24x1	20x24x1	24x30x1	24x36x1	24x36x1	24x36x1

*Required filter sizes shown are based on the larger of the ARI (Air Conditioning and Refrigeration Institute) rated cooling airflow or the heating airflow velocity of 300 ft/minute for throwaway type or 450 ft/minute for high−capacity type. Air filter pressure drop for non−standard filters must not exceed 0.08 in. wg.

ISO 9001:2000

QMI REGISTERED

ARI PERFORMANCE CERTIFIED ARI Standard 210/240 Unitary Air Conditioners

c UL US

Outdoor Sound: Octave Band Data—Decibels (dBA)

MODEL NO.	704C					
Frequency (Hz)	024	030	036	042	048	060
125	58.8	58.8	60.7	56.7	62.4	63.5
250	63.5	63.5	63.3	62.8	69.9	67.6
500	67.2	67.2	66.8	67.8	71.3	71.8
1000	66.9	66.9	66.5	67.4	73.4	75.5
2000	63.7	63.7	64.2	63.7	70.0	71.0
4000	58.3	58.3	60.3	57.7	66.3	68.1
8000	50.0	50.0	53.0	50.8	60.1	59.9

OPTIONS AND ACCESSORIES

Factory-installed options

Coil options include tin-plated* indoor hairpins, copper/copper and vinyl-coated construction for refrigerant coils. Units are shipped standard with copper tube/aluminum fin construction. See model number nomenclature for coil options.

*Tin-plated indoor coils are built with special hairpins that are designed to resist both general pitting corrosion and excessive indoor corrosion (Formicary Corrosion).

Field-installed accessories

Manual Air Damper (25% open)
Electric Heaters
Filter Rack
Flat Roof Curbs (8-in. and 14-in.)
Square-to-Round Duct Transition Kit
Evolution™ User Interface
Crankcase Heater
Low-Ambient Kit (Motormaster II Control)
Lifting Kit
Compressor Hard Start Kit

Manual outside air damper includes hood and filter rack with adjustable damper blade for up to 25% outdoor air.

Electric heaters provide additional heat in the unit when required. Each package has a heater module that slides into the controls compartment. Heater sizes range from 5.0 to 20.0 kW. The electric heater design allows the use of a single-point power supply for the entire unit, resulting in lower installed costs.

Flat roof curbs in both 8 in. and 14 in. sizes are available for roof mounted applications.

Square-to-round duct transition kit enables 024-048 size units to be fitted to 14 in. round ductwork.

Evolution User Interface coupled with the system's variable-speed indoor blower delivers Bryant's patented PerfectHumidity technology that allows for even greater humidity control. Along with more precisely controlling temperature and humidity, the Evolution User Interface offers full seven-day programmability allowing you to further customize your comfort and energy savings.

Lifting kit includes 4 metal brackets that are available to assist in lifting this product onto a roof application.

Crankcase heater provides anti-floodback protection for low-load cooling applications.

Low-ambient kit (Motormaster® II control) allows the use of mechanical cooling down to outdoor temperatures as low as 0°F.

Filter rack features easy installation, serviceability, and high-filtering performance for vertical or horizontal applications.

Compressor hard start kit assists compressor start-up by providing additional starting torque on single-phase units and prolongs compressor motor life.

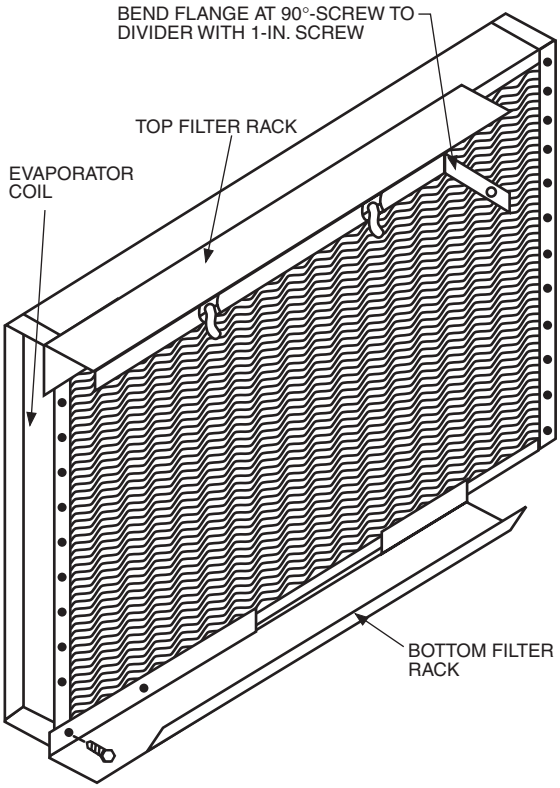
Electric Heaters

ODS Catalog	Nominal Capacity	Used With Sizes							
Ordering No.	(kW)	Fused	Stages	24	30	36	42	48	60
208/230 —SINGLE PHASE —60 Hz									
CPHEATER080A00	3.8 / 5.0	NO	1	X	X	X	X	X	X
CPHEATER082A00	5.4 / 7.2	NO	1	X	X	X	X	X	X
CPHEATER084A00	7.5 / 10.0	NO	1	X	X	X	X	X	X
CPHEATER086A00	11.3 / 15.0	YES	2		X	X	X	X	X
CPHEATER088A00	15.0 / 20.0	YES	2			X	X	X	X
208/230 - THREE PHASE - 60 Hz									
CPHEATER090A00	3.8 / 5.0	NO	1			X	X	X	X
CPHEATER091A00	7.5 / 10.0	NO	1			X	X	X	X
CPHEATER093A00	11.3 / 15.0	NO	2			X	X	X	X
CPHEATER095A00	15.0 / 20.0	YES	2				X	X	X

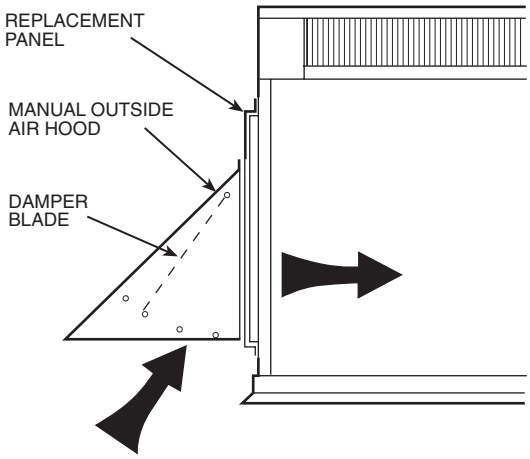
NOTE
Electric heaters are rated at 240v. Refer to Multiplication Factors table for other voltages.

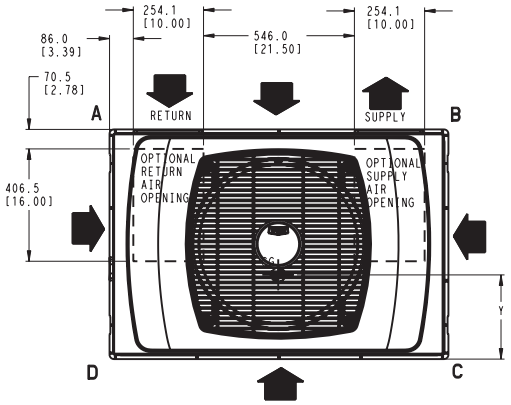
LEGEND
ODS—Order Distribution System

FILTER RACK



MANUAL OUTSIDE AIR DAMPER





TOP VIEW

UNIT	ELECTRICAL CHARACTERISTICS	UNIT WT.		UNIT HEIGHT	CENTER OF GRAVITY MM/IN		
		LBS.	KG.	"A"	X	Y	Z
704CE024	208-230-1-60	334	151.5	991.1[39.02]	508.0[20.0]	489.0[19.3]	447.0[17.6]
704CE030	208/230-1-60, 208/230-3-60	334	151.5	991.1[39.02]	508.0[20.0]	489.0[19.3]	447.0[17.6]
704CE036	208/230-1-60, 208/230-3-60	358	162.4	1041.9[41.02]	508.0[20.0]	355.6[14.0]	330.2[13.0]

	CORNER WEIGHT LBS./KG.			
	A	B	C	D
024	66/29.9	50/22.7	80/36.3	138/62.6
030	66/29.9	50/22.7	80/36.3	138/62.6
036	71/32.2	54/24.5	86/39.0	147/66.7

REQUIRED CLEARANCES TO COMBUSTIBLE MATL.

	MILLIMETERS [IN]
TOP OF UNIT	355.6 [14.00]
DUCT SIDE OF UNIT	50.8 [2.00]
SIDE OPPOSITE DUCTS	355.6 [14.00]
BOTTOM OF UNIT	12.7 [0.50]
ELECTRIC HEAT PANEL	914.4 [36.00]

NEC. REQUIRED CLEARANCES.

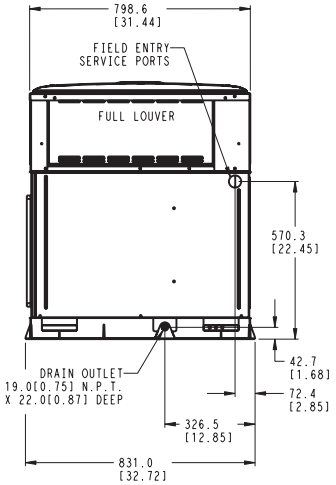
	MILLIMETERS [IN]
BETWEEN UNITS, POWER ENTRY SIDE	1066.8 [42.00]
UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE	914.0 [36.00]
UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, POWER ENTRY SIDE	1066.8 [42.00]

REQUIRED CLEARANCE FOR OPERATION AND SERVICING

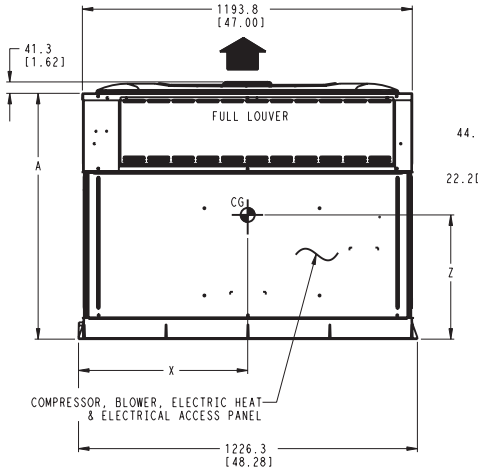
	MILLIMETERS [IN]
EVAP. COIL ACCESS SIDE	914.0 [36.00]
POWER ENTRY SIDE	914.0 [36.00]
(EXCEPT FOR NEC REQUIREMENTS)	
UNIT TOP	914.0 [36.00]
SIDE OPPOSITE DUCTS	914.0 [36.00]
DUCT PANEL	304.8 [12.00]*

*MINIMUM DISTANCES: IF UNIT IS PLACED LESS THAN 304.8 [12.00] FROM WALL SYSTEM, THEN SYSTEM PERFORMANCE MAYBE COMPROMISED.

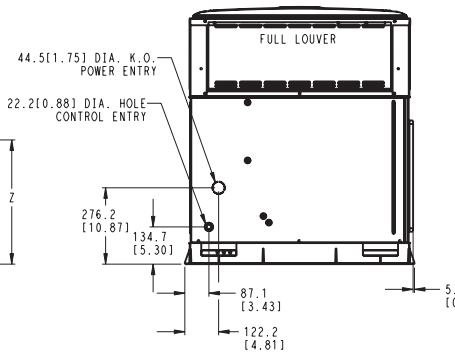
DIMENSIONS IN [] ARE IN INCHES



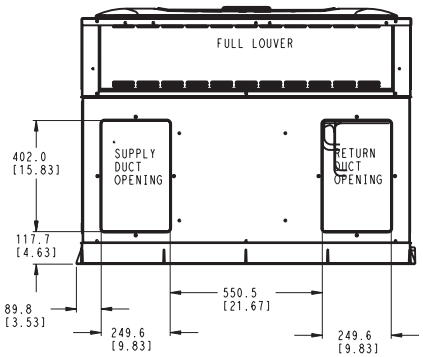
LEFT SIDE VIEW



FRONT VIEW



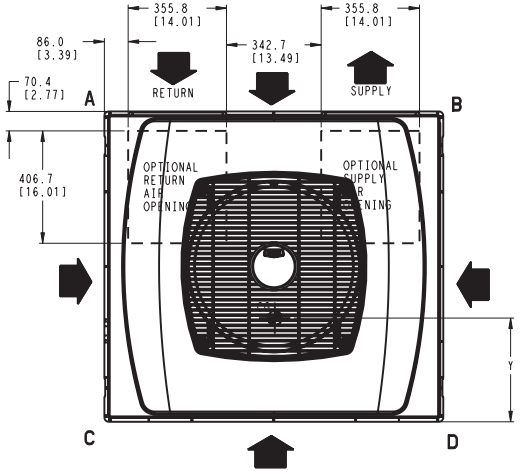
RIGHT SIDE VIEW



REAR VIEW

A06120

704C024-036 Unit Dimensions



TOP VIEW

UNIT	ELECTRICAL CHARACTERISTICS	UNIT WT.		UNIT HEIGHT	CENTER OF GRAVITY MM/IN		
		LBS.	KG.	"A"	X	Y	Z
704C042	208-230-1-60, 208/230-3-60	424	192.3	1091.7[42.98]	553.4[21.0]	520.7[20.5]	421.6[16.6]
704C048	208-230-1-60, 208/230-3-60	448	203.2	1142.5[44.98]	495.3[19.5]	539.8[21.3]	457.2[18.0]
704C060	208-230-1-60, 208/230-3-60	484	219.5	1193.3[46.98]	553.4[21.0]	508.0[20.0]	442.0[17.6]

CORNER WEIGHT LBS./KG.				
	A	B	C	D
042	84/38.1	64/29.0	102/46.3	174/78.9
048	94/42.6	57/25.8	123/55.8	174/78.9
060	103/46.7	66/29.9	132/59.9	183/83.0

REQUIRED CLEARANCES TO COMBUSTIBLE MATL.

	MILLIMETERS [IN]
TOP OF UNIT	355.6 [14.00]
DUCT SIDE OF UNIT	50.8 [2.00]
SIDE OPPOSITE DUCTS	355.6 [14.00]
BOTTOM OF UNIT	12.7 [0.50]
ELECTRIC HEAT PANEL	914.4 [36.00]

NEC. REQUIRED CLEARANCES.

	MILLIMETERS [IN]
BETWEEN UNITS, POWER ENTRY SIDE	1066.8 [42.00]
UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE	914.0 [36.00]
UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, POWER ENTRY SIDE	1066.8 [42.00]

REQUIRED CLEARANCE FOR OPERATION AND SERVICING

	MILLIMETERS [IN]
EVAP. COIL ACCESS SIDE	914.0 [36.00]
POWER ENTRY SIDE	914.0 [36.00]
(EXCEPT FOR NEC REQUIREMENTS)	
UNIT TOP	914.0 [36.00]
SIDE OPPOSITE DUCTS	914.0 [36.00]
DUCT PANEL	304.8 [12.00]*

*MINIMUM DISTANCES: IF UNIT IS PLACED LESS THAN 304.8 [12.00] FROM WALL SYSTEM, THEN SYSTEM PERFORMANCE MAYBE COMPROMISED.

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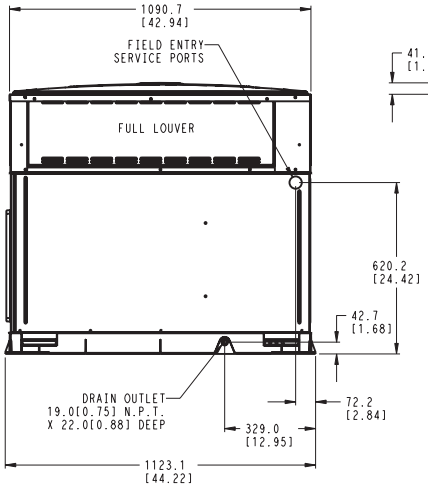
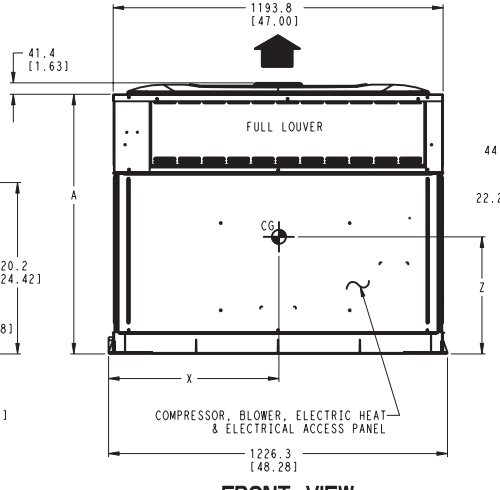
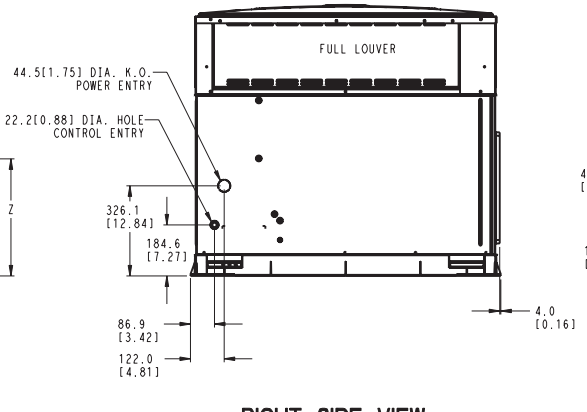


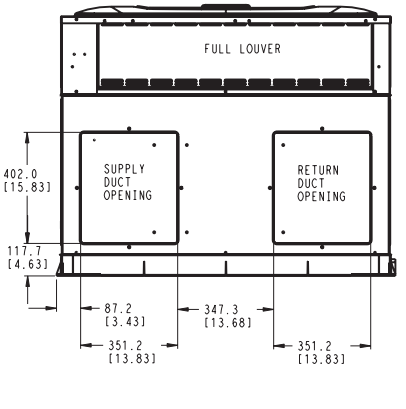
LEFT SIDE VIEW



FRONT VIEW



RIGHT SIDE VIEW

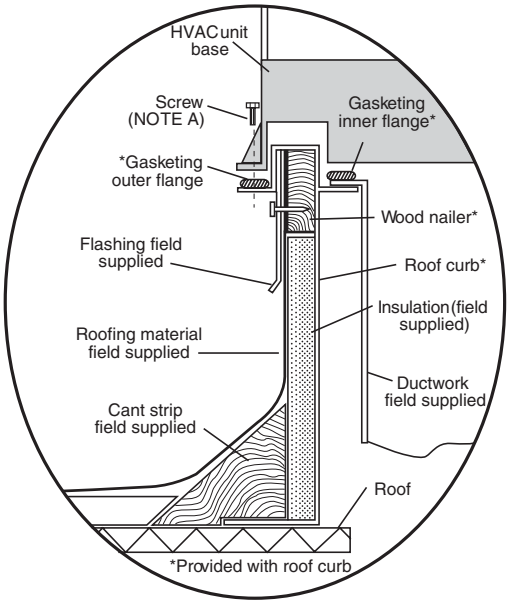


REAR VIEW

A06121

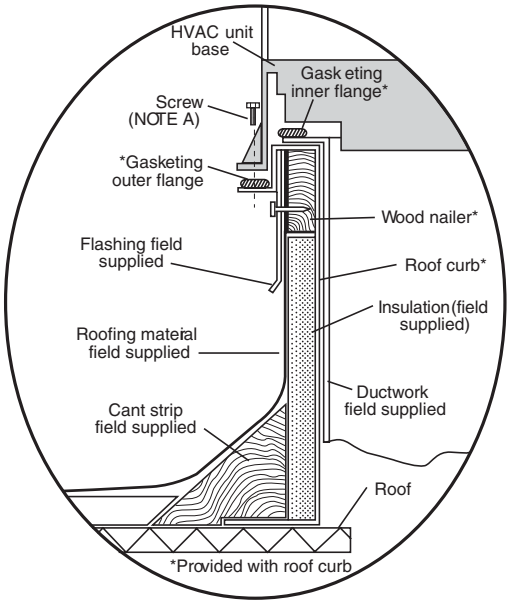
704C042-060 Unit Dimensions

ACCESSORY DIMENSIONS



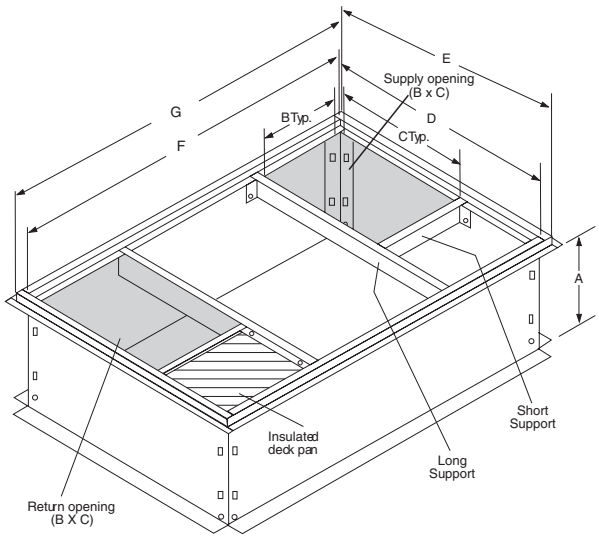
Roof Curb for Small Cabinet

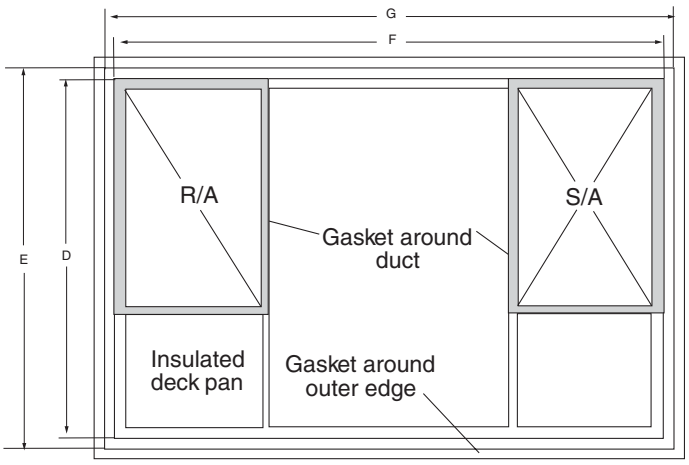
Note A: When unit mounting screw is used, retainer bracket must also be used.



Roof Curb for Large Cabinet

Note A: When unit mounting screw is used, retainer bracket must also be used.





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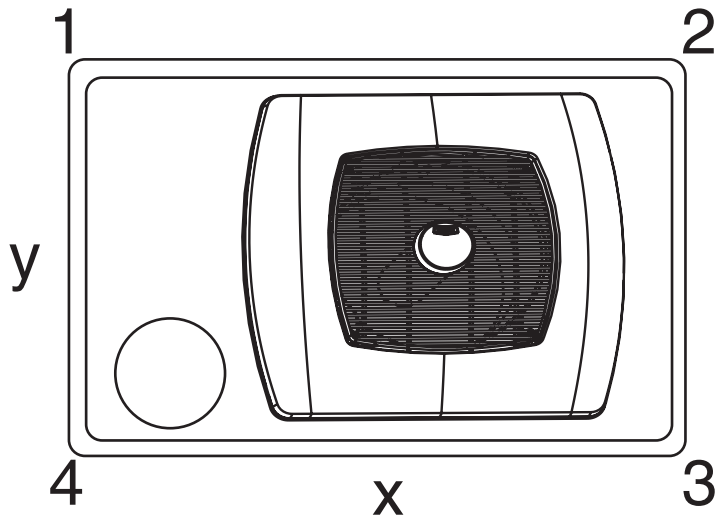
UNIT SIZE	ODS CATALOG NUMBER	A IN. (MM)	B IN. (MM)	C IN. (MM)	D IN. (MM)	E IN. (MM)	F IN. (MM)	G IN. (MM)
704C024-036	CPRFCURB006A00	8 (203)	11 (279)	16-1/2 (419)	28-3/4 (730)	30-3/8 (771)	44-5/16 (1126)	45-15/16 (1167)
	CPRFCURB007A00	14 (356)	11 (279)	16-1/2 (419)	28-3/4 (730)	30-3/8 (771)	44-5/16 (1126)	45-15/16 (1167)
704C042-060	CPRFCURB008A00	8 (203)	16-3/16 (411)	17-3/8 (441)	40-1/4 (1022)	41-15/16 (1065)	44-7/16 (1129)	46-1/16 (1169)
	CPRFCURB009A00	14 (356)	16-3/16 (411)	17-3/8 (441)	40-1/4 (1022)	41-15/16 (1065)	44-7/16 (1129)	46-1/16 (1169)

NOTES:

1. Roof curb must be set up for unit being installed.
2. Seal strip must be applied, as required, to unit being installed.
3. Dimension in ( ) are in millimeters.
4. Roof curb is made of 16-gauge steel.
5. Table lists only the dimensions, per part number, that have changed.
6. Attach ductwork to curb (flanges of duct rest on curb).
7. Insulated panels: 1-in. thick fiberglass 1 lb. density.
8. Dimensions are in inches.
9. When unit mounting screw is used (see Note A), a retainer bracket must be used as well. This bracket must also be used when required by code for hurricane or seismic conditions. This bracket is available through Micrometl.

704C CORNER WEIGHTS (IN POUNDS)



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Corner Weights (Lbs.)

	Corner Weights (Small Cabinet)					Corner Weights (Large Cabinet)			
Model 704C	Unit	024	030	036	Model 704C	Unit	042	048	060
	Total Weight	349	349	373		Total Weight	438	463	499
	Corner Weight 1	70	70	75		Corner Weight 1	88	98	107
	Corner Weight 2	54	54	58		Corner Weight 2	68	61	70
	Corner Weight 3	84	84	90		Corner Weight 3	106	127	136
	Corner Weight 4	141	141	150		Corner Weight 4	177	177	186

SELECTION PROCEDURE

Determine cooling and heating requirements at design conditions:

Given:

REQUIRED COOLING CAPACITY (TC) . . . . . 34,500 BTUH
SENSIBLE HEAT CAPACITY (SHC) . . . . . 26,000 BTUH
REQUIRED HEATING CAPACITY (SHC) . . . . 15,000 BTUH
CONDENSER ENTERING AIR TEMPERATURE . . . . . 95°F
INDOOR-AIR TEMPERATURE . . . . . 80°F EDB, 67°F EWB
EVAPORATOR AIR QUANTITY . . . . . 1200 CFM
ELECTRICAL CHARACTERISTICS 230-1-60

Select unit based on required cooling capacity

Enter Net Cooling Capacities table at condenser entering temperature of 95°F. The 036 unit at 1200 cfm and 67°F ewb (entering wet bulb) will provide a total capacity of 36,000 Btuh and a SHC of 27,200 Btuh. Calculate SHC correction, if required, using Note 4 under Cooling Capacities tables.

Select electric heat

The required heating capacity is 15,000 Btuh.

Determine additional electric heat capacity in kW.

$$\frac{15{,}000 \text{ Btuh}}{3414 \text{ Btuh/kW}} = 4.4\text{kW of heat required}$$

Enter the Electric Heater table on page 5 for 208/230v, single-phase unit. The 5-kW heater at 240v most closely satisfies the heating required. To calculate kW at 230v, multiply the heater kW by multiplication factor 0.92 found in the Multiplication Factors table on page 14.

5 kW x 0.92 = 4.6 kW

4.6 kW x 3414 Btuh/kW = 15,704 Btuh

Total unit heating capacity is 35,904 Btuh

(20,200 + 15,704).

Select unit that corresponds to power source available

The Electrical Data table shows that the unit is designed to operate at 208/230-1-60.

PERFORMANCE DATA-STANDARD ECM INDOOR MOTOR

Cooling Extended Performance Table

704C024

Temp (°F) Outdoor Air Entering Condenser		Evaporator Air – CFM/BF							
		700 / 0.02				800 / 0.03			
		Evaporator Air Ewb (°F)							
		62	63*	67	72	62	63*	67	72
75	TC	23.4	23.9	25.9	28.4	24.0	24.5	26.5	29.1
	SHC	20.3	19.8	17.6	14.7	21.9	21.3	18.7	15.4
	kW	1.6	1.6	1.8	1.8	1.7	1.7	1.8	1.8
85	TC	22.3	22.7	24.8	27.3	22.9	23.3	25.3	27.9
	SHC	19.9	19.2	17.0	14.2	21.4	20.7	18.1	14.9
	kW	1.8	1.8	2.0	2.0	1.9	1.9	2.0	2.0
95	TC	21.3	21.8	23.5	26.0	21.8	22.2	24.0	26.5
	SHC	19.3	18.8	16.5	13.6	20.8	20.2	17.6	14.3
	kW	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
105	TC	20.0	20.5	22.2	24.6	20.5	20.9	22.6	25.0
	SHC	18.8	18.1	15.8	13.1	20.2	19.5	16.9	13.7
	kW	2.4	2.4	2.3	2.3	2.4	2.4	2.4	2.4
115	TC	18.6	19.1	20.7	22.9	19.2	19.5	21.1	23.3
	SHC	18.2	17.4	15.3	12.3	19.4	18.8	16.3	13.0
	kW	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
125	TC	17.1	17.5	19.3	21.1	17.8	18.0	19.4	21.4
	SHC	17.8	17.0	14.5	11.7	18.5	18.1	15.5	12.3
	kW	2.8	2.8	3.0	3.0	2.9	2.9	3.0	3.0

Cooling Extended Performance Table

704C030

Temp (°F) Outdoor Air Entering Condenser		Evaporator Air – CFM/BF							
		875 / 0.06				1000 / 0.07			
		Evaporator Air Ewb (°F)							
		62	63*	67	72	62	63*	67	72
75	TC	27.9	28.6	30.7	33.6	28.8	29.4	31.6	34.5
	SHC	24.1	20.0	20.6	16.8	26.0	21.2	22.1	17.8
	kW	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2
85	TC	26.9	27.5	29.5	32.3	27.6	28.1	30.2	33.1
	SHC	23.8	19.5	20.3	16.4	25.6	20.8	21.7	17.4
	kW	2.3	2.3	2.4	2.4	2.3	2.4	2.4	2.4
95	TC	25.6	26.2	28.2	30.8	26.3	26.8	28.8	31.5
	SHC	23.1	19.1	19.9	16.0	24.7	20.5	21.3	16.9
	kW	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
105	TC	24.3	24.7	26.6	29.2	25.1	25.3	27.2	29.7
	SHC	22.4	18.6	19.3	15.4	23.8	19.9	20.8	16.3
	kW	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
115	TC	22.8	23.2	24.9	27.3	23.8	23.6	25.3	27.7
	SHC	21.7	18.0	18.8	14.8	22.3	19.3	20.2	15.7
	kW	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
125	TC	21.4	21.4	24.9	27.3	23.8	23.6	25.3	27.7
	SHC	20.7	17.3	18.8	14.8	22.3	19.3	20.2	15.7
	kW	3.5	3.5	3.2	3.2	3.2	3.2	3.2	3.2

See page 14 for cooling notes.

PERFORMANCE DATA-STANDARD ECM INDOOR MOTOR (CONT)

Cooling Extended Performance Table

704C036

Temp (°F) Outdoor Air Entering Condenser		Evaporator Air – CFM/BF							
		1050/ 0.04				1200 / 0.05			
		Evaporator Air Ewb (°F)							
		62	63*	67	72	62	63*	67	72
75	TC	34.8	35.5	38.4	42.4	36.4	36.9	39.8	43.8
	SHC	30.4	24.7	25.7	20.9	34.3	27.5	28.7	22.8
	kW	2.5	2.6	2.6	2.6	2.7	2.7	2.7	2.8
85	TC	33.2	34.0	36.7	40.5	34.8	35.2	37.9	41.8
	SHC	29.6	24.1	25.0	20.2	33.5	26.8	28.0	22.1
	kW	2.8	2.9	2.9	2.9	3.0	3.0	3.0	3.0
95	TC	31.5	32.3	34.8	38.5	33.3	33.4	36.0	39.7
	SHC	29.4	23.3	24.2	19.5	32.5	26.1	27.2	21.4
	kW	3.1	3.2	3.2	3.2	3.3	3.3	3.3	3.4
105	TC	29.7	30.4	33.0	36.4	31.7	31.5	33.9	37.4
	SHC	28.8	22.5	23.5	18.8	31.1	25.3	26.5	20.6
	kW	3.5	3.5	3.5	3.5	3.6	3.6	3.7	3.7
115	TC	28.1	28.5	30.8	34.0	30.0	29.4	31.7	34.9
	SHC	27.8	21.7	22.7	18.0	29.7	24.5	25.7	19.8
	kW	3.8	3.9	3.9	3.9	4.0	4.0	4.0	4.0
125	TC	26.5	26.4	28.5	31.5	28.1	27.2	29.3	32.3
	SHC	26.2	20.9	21.9	17.1	27.8	23.5	24.7	18.9
	kW	4.2	4.3	4.3	4.3	4.4	4.4	4.4	4.4

Cooling Extended Performance Table

704C042

Temp (°F) Outdoor Air Entering Condenser		Evaporator Air – CFM/BF							
		1225/ 0.07				1400 / 0.08			
		Evaporator Air Ewb (°F)							
		62	63*	67	72	62	63*	67	72
75	TC	40.5	41.2	44.2	48.4	41.5	42.1	45.1	59.4
	SHC	35.4	29.0	30.0	24.3	37.9	30.8	31.9	25.6
	kW	3.0	3.0	3.0	3.1	3.0	3.0	3.0	3.1
85	TC	38.7	39.4	42.3	46.3	39.7	40.2	43.2	47.2
	SHC	34.6	28.2	29.2	23.6	37.0	30.0	31.1	24.8
	kW	3.3	3.3	3.4	3.4	3.3	3.3	3.4	3.4
95	TC	36.9	37.5	40.3	44.1	37.8	38.2	41.0	44.9
	SHC	33.8	27.4	28.4	22.8	35.9	29.1	30.3	24.0
	kW	3.7	3.7	3.7	3.8	3.7	3.7	3.7	3.8
105	TC	34.9	35.4	38.0	41.6	36.0	36.0	38.7	42.3
	SHC	32.7	26.5	27.6	22.0	34.3	28.3	29.4	23.2
	kW	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
115	TC	32.8	33.1	35.5	38.9	34.0	33.7	36.1	39.5
	SHC	31.4	25.6	26.6	21.0	32.8	27.3	28.5	22.2
	kW	4.5	4.5	4.5	4.6	4.5	4.5	4.5	4.6
125	TC	30.6	30.5	32.7	35.7	31.7	31.0	33.2	36.2
	SHC	29.6	24.5	25.5	20.0	30.6	26.1	27.3	21.1
	kW	4.9	4.9	4.9	5.0	4.9	4.9	4.9	5.0

See page 14 for cooling notes.

PERFORMANCE DATA-STANDARD ECM INDOOR MOTOR (CONT)

Cooling Extended Performance Table

704C048

Temp (°F) Outdoor Air Entering Condenser		Evaporator Air – CFM/BF							
		1400/ 0.06				1600 / 0.08			
		Evaporator Air Ewb (°F)							
		62	63*	67	72	62	63*	67	72
75	TC	44.7	45.3	49.0	53.9	46.0	46.6	50.3	55.3
	SHC	40.8	32.8	34.3	27.6	43.9	35.2	36.7	29.3
	kW	3.3	3.3	3.3	3.4	3.3	3.3	3.4	3.4
85	TC	42.4	43.0	46.5	51.2	43.7	44.1	47.7	52.4
	SHC	39.6	31.7	33.2	26.5	42.4	34.0	35.7	28.2
	kW	3.7	3.7	3.7	3.8	3.7	3.7	3.7	3.8
95	TC	40.0	40.6	44.0	48.5	42.3	41.8	45.0	49.5
	SHC	38.2	30.6	32.2	25.5	41.1	33.1	34.5	27.1
	kW	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.2
105	TC	37.9	38.1	41.2	45.5	39.7	39.1	42.1	46.4
	SHC	36.6	29.4	30.9	24.4	38.3	31.8	33.3	25.8
	kW	4.5	4.5	4.5	4.6	4.5	4.5	4.5	4.6
115	TC	36.6	35.5	38.3	42.3	37.1	36.2	39.1	43.0
	SHC	34.1	28.2	29.6	23.2	36.6	30.4	32.0	24.7
	kW	5.0	4.9	5.0	5.0	5.0	5.0	5.0	5.0
125	TC	33.1	32.6	35.3	38.8	34.6	33.3	35.9	39.5
	SHC	32.4	27.0	28.4	21.9	34.1	28.9	30.6	23.3
	kW	5.5	5.4	5.5	5.5	5.5	5.5	5.5	5.5

Cooling Extended Performance Table

704C060

Temp (°F) Outdoor Air Entering Condenser		Evaporator Air – CFM/BF							
		1750/ 0.007				2000 / 0.01			
		Evaporator Air Ewb (°F)							
		62	63*	67	72	62	63*	67	72
75	TC	58.8	59.7	64.0	69.8	60.0	60.8	64.9	70.8
	SHC	53.6	51.8	44.5	35.4	57.6	55.4	47.1	36.8
	kW	4.2	4.3	4.3	4.4	4.4	4.4	4.5	4.6
85	TC	56.2	57.0	61.1	66.6	57.4	58.1	61.9	67.4
	SHC	52.4	50.5	43.2	34.2	56.3	54.2	45.8	35.6
	kW	4.7	4.7	4.8	4.9	4.8	4.9	5.0	5.0
95	TC	53.5	54.3	58.0	63.2	55.0	55.3	58.7	64.1
	SHC	51.1	49.2	41.9	32.9	55.0	52.9	44.5	34.4
	kW	5.1	5.2	5.3	5.3	5.2	5.3	5.5	5.5
105	TC	50.7	51.4	54.8	59.6	52.5	52.4	55.4	60.2
	SHC	49.8	47.9	40.6	31.6	52.5	51.6	43.2	33.0
	kW	5.7	5.7	5.8	5.9	5.8	5.8	6.0	6.1
115	TC	48.1	48.3	51.3	56.8	49.7	49.7	51.8	57.0
	SHC	48.1	46.6	39.2	30.6	49.7	49.7	41.8	31.7
	kW	6.2	6.3	6.4	6.4	6.4	6.4	6.6	6.6
125	TC	45.2	45.1	47.4	52.5	46.4	46.4	47.9	52.2
	SHC	45.2	45.1	37.6	28.9	46.4	46.4	40.2	29.7
	kW	6.8	6.9	7.0	7.0	7.0	7.0	7.2	7.2

See page 14 for cooling notes.

PERFORMANCE DATA (CONT)

Multiplication Factors

Heater kW Rating	Voltage Distribution V/3/60	Multiplication Factor
240	200	.69
	208	.75
	230	.92
	240	1.00

Example: 15.0 kW (at 240v) heater on 208v
= 15.0 (.75 mult factor)
= 11.25 capacity at 208v

LEGEND
BF — Bypass Factor
edb — Entering Dry–Bulb
Ewb — Entering Wet–Bulb
kW — Total Unit Power Input
ldb — Leaving Dry–Bulb
lwb — Leaving Wet–Bulb
SHC — Sensible Heat Capacity (1000 Btuh)
TC — Total Capacity (1000 Btuh) (net)

*At 75°F entering dry bulb (Tennessee Valley Authority [TVA] rating conditions); all other at 80°F entering dry bulb.

COOLING NOTES:
1. Ratings are net; they account for the effects of the evaporator fan motor power and heat.
2. Direct interpolation is permissible. Do not extrapolate.
3. The following formulas may be used:

$$^{t}ldb = {}^{t}edb - \frac{\text{Sensible capacity (Btuh)}}{1.10 \times cfm}$$

$$^{t}lwb = \text{Wet–bulb temperature corresponding to enthalpy air leaving evaporator coil } (^{h}lwb)$$

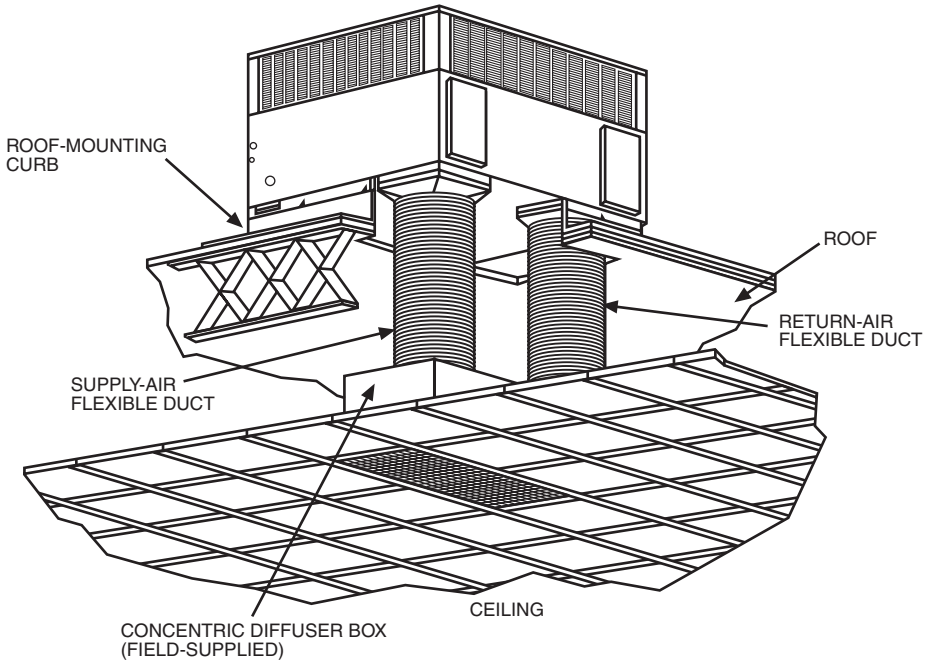
$$^{h}lwb = {}^{h}ewb - \frac{\text{total capacity (Btuh)}}{4.5 \times cfm}$$

Where: ^{h}ewb = Enthalpy of air entering evaporator coil

4. The SHC is based on 80° F edb temperature of air entering evaporator coil. Below 80° F edb, subtract (corr factor x cfm) from SHC. Above 80° F edb, add (corr factor x cfm) to SHC. Correction Factor = 1.10 x (1 + BF) x (edb + 80).

5. Integrated capacity is maximum (instantaneous) capacity less the effect of frost on the outdoor coil and the heat required to defrost it.

TYPICAL PIPING AND WIRING



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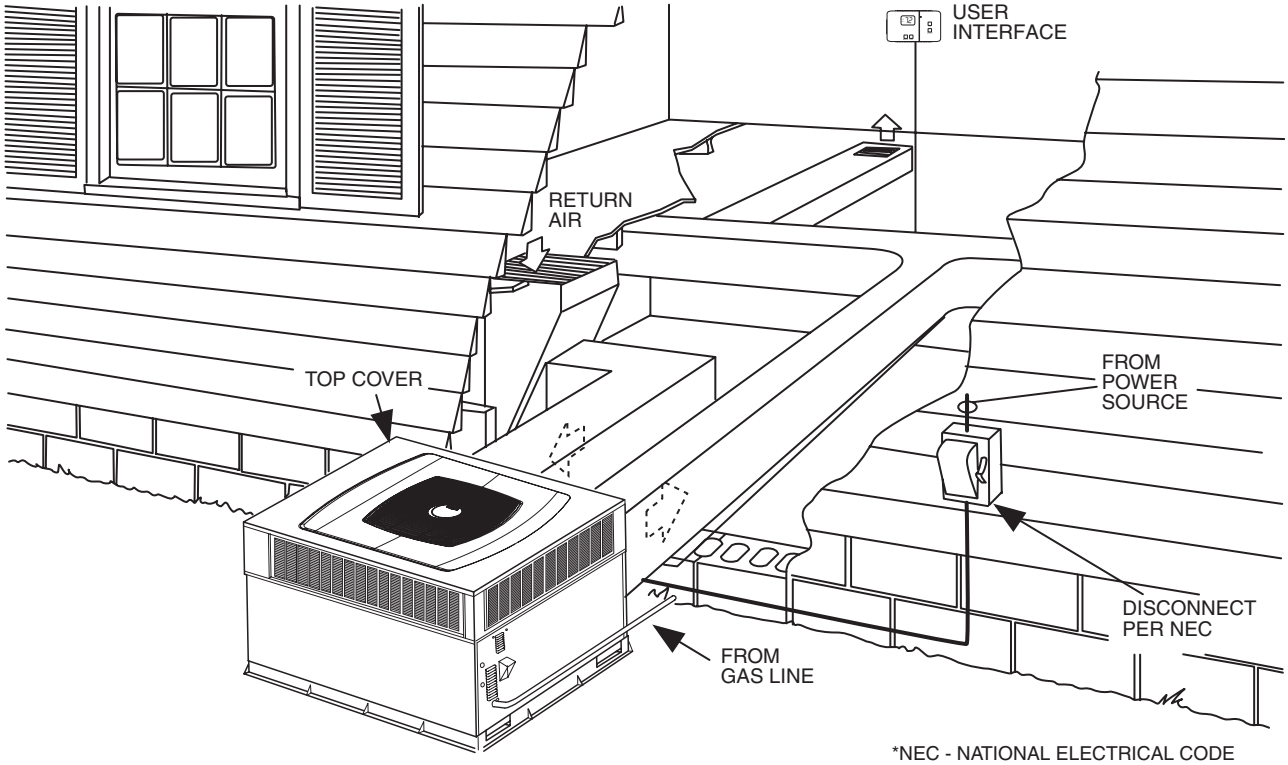
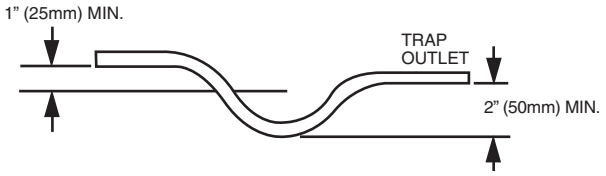


*NEC - NATIONAL ELECTRICAL CODE

A06122

APPLICATION DATA

Condensate trap — A 2-in. condensate trap must be field supplied.



Ductwork — Secure downflow discharge ductwork to roof curb. For horizontal discharge applications, attach ductwork to unit with flanges.

To convert a unit to downflow discharge — Units are equipped with factory-installed inserts in the downflow openings. Remove the inserts similar to removing an electrical knockout. Leave on duct covers to seal the horizontal discharge openings in the unit. Units installed in horizontal discharge orientation do not require duct covers.

Minimum cooling ambient operating temperature — All standard units have a minimum ambient operating temperature of 55°F. With accessory low-ambient temperature kit, units can operate at temperatures down to 0°F.

Maximum operating outdoor air temperature — Maximum outdoor operating air temperature for cooling is 125°F.

ELECTRICAL DATA

UNIT SIZE	V-PH-HZ	VOLTAGE RANGE		COMPRESSOR		OFM FLA	IFM FLA	ELECTRIC HEAT		SINGLE POINT POWER SUPPLY	
		MIN	MAX	RLA	LRA			NOMINAL kW*	FLA	MCA	MOCP
024	208/230-1-60	187	253	13.5	61.0	0.8	4.3	-/-	-/-	22.0/22.0	30/30
								3.8/5.0	18.1/20.8	27.9/31.4	30/35
								5.4/7.2	26.0/30.0	37.9/42.9	40/45
								7.5/10.0	36.1/41.7	50.5/57.5	60/60
030	208/230-1-60	187	253	15.9	73.0	0.8	4.3	-/-	-/-	25.0/25.0	30/30
								3.8/5.0	18.1/20.8	27.9/31.4	30/35
								5.4/7.2	26.0/30.0	37.9/42.9	40/45
								7.5/10.0	36.1/41.7	50.5/57.5	60/65
036	208/230-1-60	187	253	16.9	83.0	0.8	6.8	-/-	-/-	28.7/28.7	35/35
								3.8/5.0	18.1/20.8	31.1/34.5	35/35
								5.4/7.2	26.0/30.0	41.0/46.0	40/50
								7.5/10.0	36.1/41.7	53.6/60.6	60/70
								11.3/15.0	54.2/62.5	76.2/86.6	80/90
	208/230-3-60	187	253	12.2	77.0	0.8	6.8	-/-	-/-	22.9/22.9	30/30
								3.8/5.0	10.4/12.0	22.9/23.5	30/30
								7.5/10.0	20.8/24.1	34.6/38.6	35/35
								11.3/15.0	31.3/36.1	47.6/53.6	50/60
042	208/230-1-60	187	253	22.4	105.0	0.8	6.8	-/-	-/-	35.6/35.6	45/45
								3.8/5.0	18.1/20.8	35.6/35.6	40/45
								5.4/7.2	26.0/30.0	41.0/46.0	40/50
								7.5/10.0	36.1/41.7	53.6/60.6	60/70
								11.3/15.0	54.2/62.5	76.2/86.6	80/90
								15.0/20.0	72.2/83.3	98.8/112.7	100/125
	208/230-3-60	187	253	15.4	88.0	0.8	6.8	-/-	-/-	26.9/26.9	35/35
								3.8/5.0	10.4/12.0	26.9/26.9	30/35
								7.5/10.0	20.8/24.1	34.6/38.6	35/35
								11.3/15.0	31.3/36.1	47.6/53.6	50/60
								15.0/20.0	41.6/48.0	60.5/68.5	70/70
048	208/230-1-60	187	253	21.3	109.0	1.6	6.8	-/-	-/-	35.0/35.0	45/45
								3.8/5.0	18.1/20.8	35.0/35.0	40/45
								5.4/7.2	26.0/30.0	41.0/46.0	40/50
								7.5/10.0	36.1/41.7	53.6/60.6	60/70
								11.3/15.0	54.2/62.5	76.2/86.6	80/90
								15.0/20.0	72.2/83.3	98.8/112.7	100/125
	208/230-3-60	187	253	14.7	91.0	1.6	6.8	-/-	-/-	26.8/26.8	35/35
								3.8/5.0	10.4/12.0	26.8/26.8	30/35
								7.5/10.0	20.8/24.1	34.6/38.6	35/35
								11.3/15.0	31.3/36.1	47.6/53.6	50/60
								15.0/20.0	41.6/48.0	60.5/68.5	70/70
060	208/230-1-60	187	253	27.0	145.0	1.6	9.1	-/-	-/-	44.5/44.5	60/60
								3.8/5.0	18.1/20.8	44.5/44.5	45/45
								5.4/7.2	26.0/30.0	43.9/48.9	60/60
								7.5/10.0	36.1/41.7	56.5/63.5	50/70
								11.3/15.0	54.2/62.5	79.1/89.5	80/90
								15.0/20.0	72.2/83.3	101.6/115.5	110/125
	208/230-3-60	187	253	18.1	123.0	1.6	9.1	-/-	-/-	33.3/33.3	40/40
								3.8/5.0	10.4/12.0	33.3/33.3	35/35
								7.5/10.0	20.8/24.1	37.4/41.4	40/40
								11.3/15.0	31.3/36.1	50.5/56.5	50/50
								15.0/20.0	41.6/48.0	63.3/71.3	70/80

See Legend and Notes on p. 18

LEGEND

FLA	—	Full Load Amps
LRA	—	Locked Rotor Amps
MCA	--	Minimum Circuit Amps
MOCP	—	Maximum Overcurrent Protection
RLA	—	Rated Load Amps

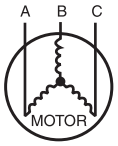
NOTES:

1. In compliance with NEC (National Electrical Code) requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be Power Supply fuse. The CGA (Canadian Gas Association) units may be fuse or circuit breaker.
2. Minimum wire size is based on 60 C copper wire. If other than 60 C wire is used, or if length exceeds wire length in table, determine size from NEC.
3. Unbalanced 3-Phase Supply Voltage
   Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percentage of voltage imbalance

   $$\% \text{ Voltage imbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

* Heater capacity (kW) based on heater voltage of 208v & 240v. If power distibution voltage to unit varies from rated heater voltage, heater kW will vary accordingly.

EXAMPLE: Supply voltage is 230-3-60.



AB = 228 v
BC = 231 v
AC = 227 v

$$\text{Average Voltage} = \frac{228 + 231 + 227}{3} = \frac{686}{3} = 229$$

Determine maximum deviation from average voltage.
(AB) 229 - 228 = 1 v
(BC) 231 - 229 = 2 v
(AC) 229 - 227 = 2 v

Maximum deviation is 2 v.

Determine percent of voltage imbalance

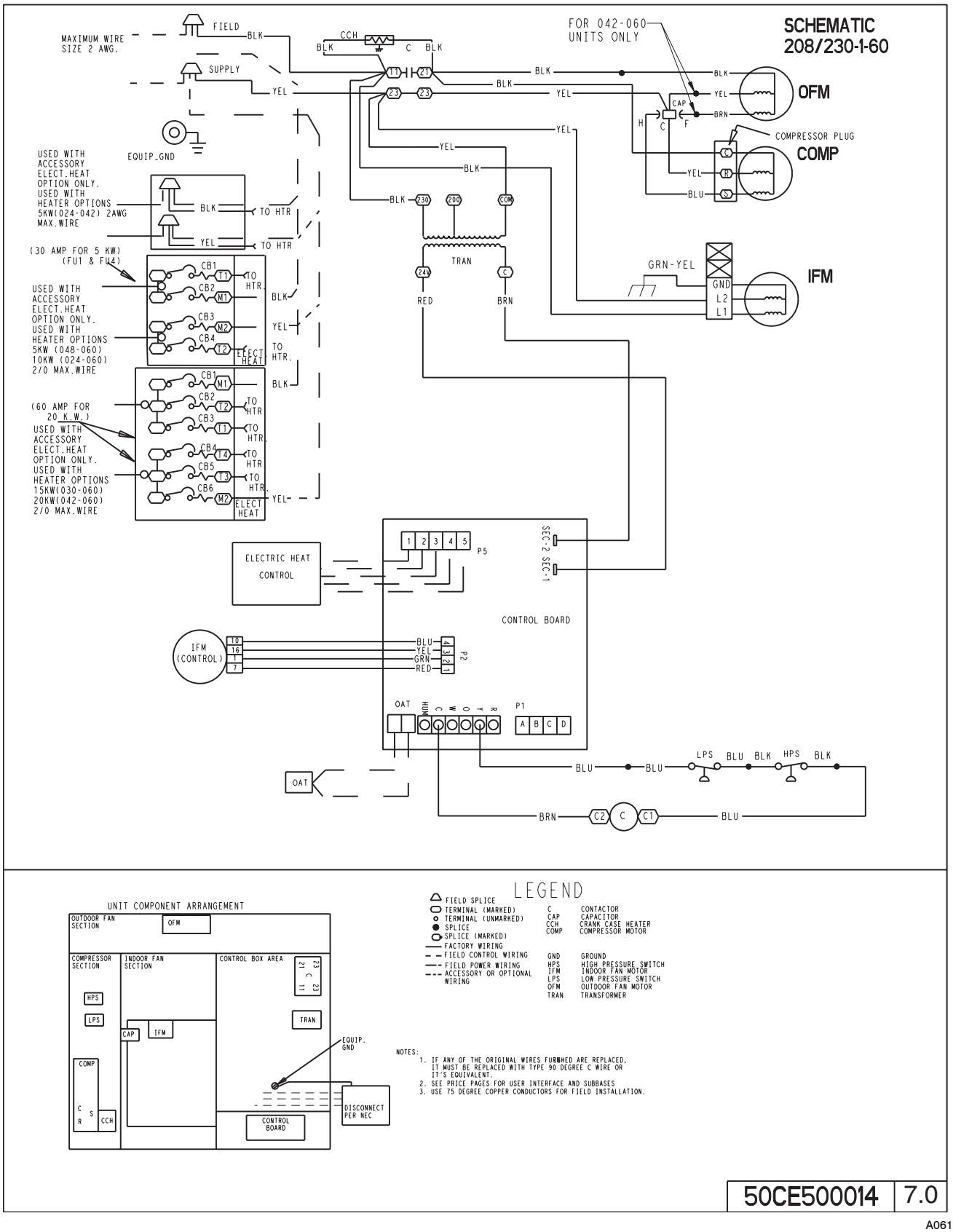
$$\% \text{ Voltage Imbalance} = 100 \times \frac{2}{229} = 0.8\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

C03014

TYPICAL WIRING SCHEMATIC — 230-1-60



LEGEND

FIELD SPLICE		C	CONTACTOR
TERMINAL (MARKED)		CAP	CAPACITOR
TERMINAL (UNMARKED)		CCH	CRANK CASE HEATER
SPLICE		COMP	COMPRESSOR MOTOR
SPLICE (MARKED)			
FACTORY WIRING			
FIELD CONTROL WIRING		GND	GROUND
FIELD POWER WIRING		HPS	HIGH PRESSURE SWITCH
ACCESSORY OR OPTIONAL WIRING		IFM	INDOOR FAN MOTOR
		LPS	LOW PRESSURE SWITCH
		OFM	OUTDOOR FAN MOTOR
		TRAN	TRANSFORMER

NOTES:
1. IF ANY OF THE ORIGINAL WIRES FURNISHED ARE REPLACED, IT MUST BE REPLACED WITH TYPE 90 DEGREE C WIRE OR IT'S EQUIVALENT.
2. SEE PRICE PAGES FOR USER INTERFACE AND SUBBASES
3. USE 75 DEGREE COPPER CONDUCTORS FOR FIELD INSTALLATION.

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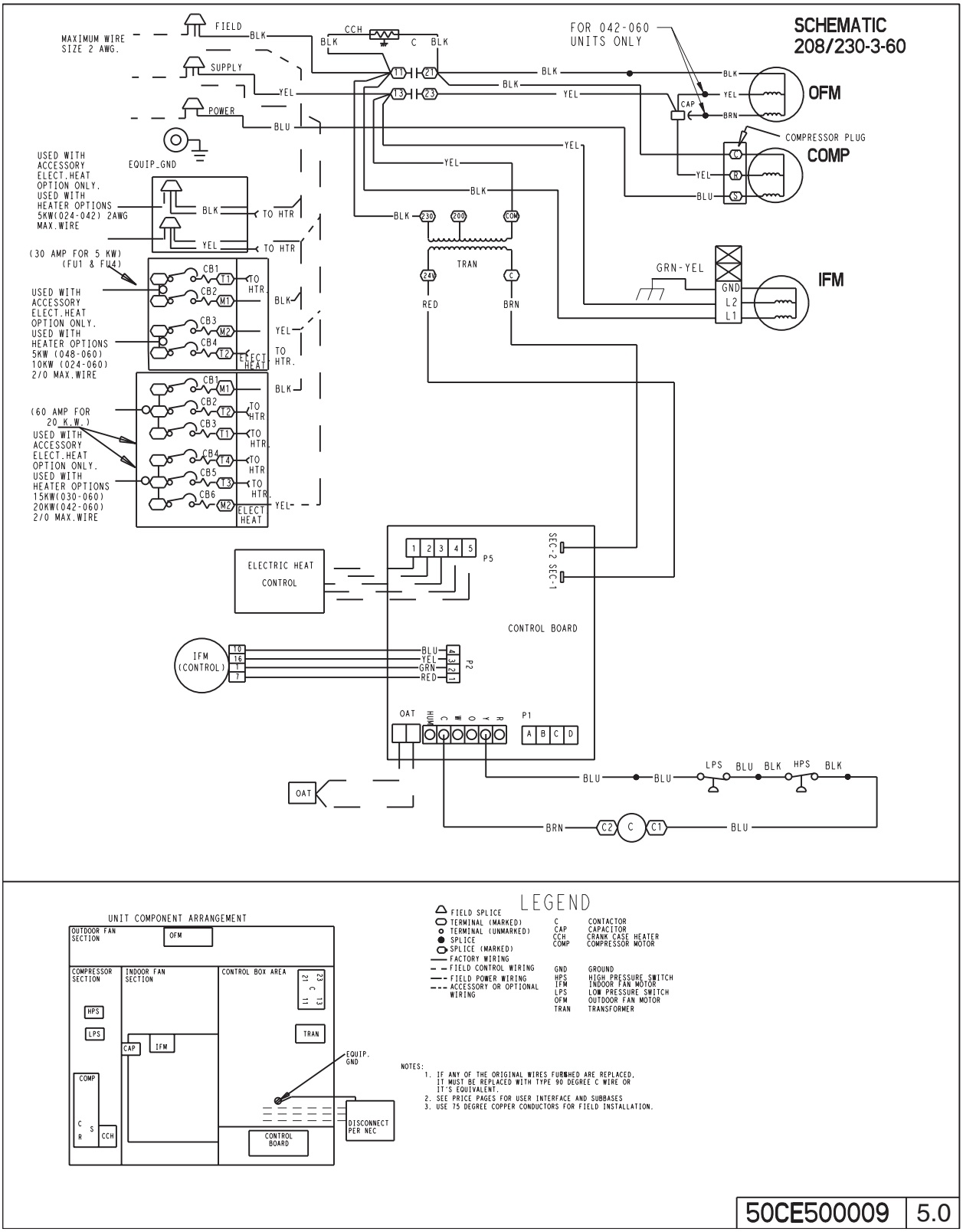
704C

TYPICAL WIRING SCHEMATIC — 230-3-60



LEGEND

FIELD SPLICE		C	CONTACTOR
TERMINAL (MARKED)		CAP	CAPACITOR
TERMINAL (UNMARKED)		CCH	CRANK CASE HEATER
SPLICE		COMP	COMPRESSOR MOTOR
SPLICE (MARKED)			
FACTORY WIRING		GND	GROUND
FIELD CONTROL WIRING		HPS	HIGH PRESSURE SWITCH
FIELD POWER WIRING		IFM	INDOOR FAN MOTOR
ACCESSORY OR OPTIONAL WIRING		LPS	LOW PRESSURE SWITCH
		OFM	OUTDOOR FAN MOTOR
		TRAN	TRANSFORMER

NOTES:
1. IF ANY OF THE ORIGINAL WIRES FURNISHED ARE REPLACED, IT MUST BE REPLACED WITH TYPE 90 DEGREE C WIRE OR IT'S EQUIVALENT.
2. SEE PRICE PAGES FOR USER INTERFACE AND SUBBASES
3. USE 75 DEGREE COPPER CONDUCTORS FOR FIELD INSTALLATION.

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CONTROLS

Sequence of Operation

The packaged air conditioner is designed for installation with a communicating User Interface. This unit will not respond to commands provided by a common thermostat except under certain emergency situations.

The User Interface uses temperature, humidity and other data supplied from indoor and outdoor system components to control heating or cooling system for optimum comfort. The unit will be commanded by User Interface to supply airflow. The unit will operate the indoor blower at requested airflow for most modes.

The nominal requested airflow will be 350 cfm per ton of nominal cooling capacity as defined by unit size. Actual airflow request will be adjusted from nominal using indoor and outdoor temperature and indoor humidity data to optimize the system operation for occupant comfort and system efficiency. Refer to User Interface literature for further system control details.

Airflow during electric heater operation must be greater than a minimum level for safe operation. If User Interface instructs unit to turn on electric heat and the requested airflow is less than the minimum level the unit control will override requested value.

NOTE: Once the compressor has started and then has stopped, it should not be started again until 4 minutes have elapsed. The cooling cycle remains “on” until the room temperature drops to point that is slightly below the cooling control setting of the user interface.

GUIDE SPECIFICATIONS

SINGLE-PACKAGED ELECTRIC COOLING UNITS
CONSTANT VOLUME APPLICATION

HVAC GUIDE SPECIFICATIONS

SIZE RANGE: 2 TO 5 TONS, NOMINAL COOLING

MODEL NUMBER: 704C

PART I - GENERAL

SYSTEM DESCRIPTION

Outdoor rooftop or ground mounted electric cooling unit utilizing a hermetic compressor for cooling duty and optional electric heating. Unit shall discharge supply air vertically or horizontally as shown on contract drawings. Outdoor fan/coil section shall have a draw-thru design with vertical discharge for minimum sound levels.

QUALITY ASSURANCE

A. Unit shall be rated in accordance with ARI Standards 210/240, and 270.

B. Unit shall be designed in accordance with UL Standard 1995.

C. Unit shall be manufactured in a facility registered to ISO 9001 manufacturing quality standard

D. Unit shall be UL listed and c-UL certified as a total package for safety requirements.

E. Roof curb shall be designed to conform to NRCA Standards.

F. Insulation and adhesives shall meet NFPA 90A requirements for flame spread and smoke generation.

G. Cabinet insulation shall meet ASHRAE Standard 62P.

DELIVERY, STORAGE, AND HANDLING

Unit shall be stored and handled per manufacturer's recommendations.

PART 2- PRODUCTS

EQUIPMENT

A. General:

Factory-assembled, single-piece, cooling unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, refrigerant charge (R-410A), and special features required prior to field start-up.

B. Unit Cabinet:

1. Unit cabinet shall be constructed of phosphated, zinc-coated, prepainted steel capable of withstanding 500 hrs of salt spray.
2. Normal service shall be through a single removable cabinet panel.
3. The unit shall be constructed on a rust proof unit base that has an externally trapped, integrated sloped drain pan.
4. Indoor fan compartment top surface shall be insulated with a minimum 1/2-in. thick, flexible fiberglass insulation, coated on the air side and retained by adhesive and mechanical means. The indoor wall sections will be insulated with a foil-faced insulation capable of being wiped clean. Aluminum foil-faced fiberglass insulation shall be used in the entire indoor air cavity seciton.
5. Unit shall have a field-supplied condensate trap.

C. Fans:

1. The indoor fan shall be variable-speed motor and control, as shown on equipment drawings.
2. Fan wheel shall be made from steel, be double-inlet type. It shall have forward-curved blades with a corrosion-resistant finish and shall be dynamically balanced.
3. Outdoor fan shall be of the direct-driven propeller type with aluminum blades, riveted to corrosion-resistant steel spiders. It shall be dynamically balanced and discharge air vertically.

D. Compressor:

1. Fully hermetic compressors with factory-installed vibration isolation.
2. Scroll compressors shall be standard on all units.

E. Coils:

1. Indoor and outdoor coils shall have aluminum plate fins mechanically bonded to seamless copper tubes with all joints brazed.
2. Tube sheet openings shall be bellied to prevent tube wear.

F. Refrigerant Metering Device:
Refrigerant metering device shall be of the TXV type.

G. Filters:
Filter section shall consist of field-installed, throw-away, 1-in. thick fiberglass filters of commercially available sizes.

H. Controls and Safeties:

1. Unit controls shall be complete with self-contained low voltage control circuit.
2. Units shall incorporate an internal compressor protector that provides reset capability.
3. Unit shall provide high and low/loss-of-charge pressure safety protection.

I. Operating Characteristics:

1. Unit shall be capable of starting and running at 125°F ambient outdoor temperature, exceeding maximum load criteria of ARI Standard 240.
2. Compressor with standard controls shall be capable of operation down to 55°F ambient outdoor temperature.

J. Electrical Requirements:
All unit power wiring shall enter unit cabinet at a single location.

K. Motors:

1. Compressor motors shall be of the refrigerant-cooled type with line-break thermal and current overload protection.
2. All fan motors shall have permanently lubricated bearings and inherent automatic reset thermal overload protection.
3. Outdoor fan motor shall be totally enclosed.

L. Grille

1. Louvered Grille:
Louvered grille shall be standard on all units.

GUIDE SPECIFICATIONS (CONT)

M. Special Features:

1. Coil Options:
   Shall include factory-installed optional tin-plated indoor copper/copper and vinyl-coated refrigerant coils.
2. Flat Roof Curb:
   Curbs shall have seal strip and a wood nailer for flashing and shall be installed per manufacturer's instructions.
3. Manual Outdoor Air Damper:
   Package shall consist of damper, bird screen, and rain hood which can be preset to admit outdoor air for year-round ventilation.
4. Evolution™ User Interface:
   To provide for two-stage heating and one-stage cooling in addition to manual or automatic changeover and indoor fan control.
5. Low-Ambient Package:
   Shall consist of a solid-state control and outdoor coil temperature sensor for controlling outdoor fan motor operation, which shall allow unit to operate down to 0°F outdoor ambient temperature in cooling.
6. Filter Rack Kit:
   Shall provide filter mounting for downflow and horizontal applications.
7. Square-To-Round Duct Transitions:
   Shall have the ability to convert the supply and return openings from rectangular to round (024-048 sizes only).
8. Crankcase Heater:
   Shall provide anti-floodback protection for low-load cooling applications. (Standard on 042-060 sizes.)
9. Compressor Protection (Time Guard® II Kit)
   Solid-state control shall protect compressor by preventing "short cycling."
10. Electric heaters:
    a. Electric heater shall be available as a field-installed option.
    b. Heater elements shall be open-wire type, adequately supported and insulated with ceramic bushings.
    c. Electric heater packages must provide single-point power connection capability.
11. Compressor Hard Start Kit:
    Shall be available to give a boost to the compressor motor at each start-up.

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Replaces: New